UNITED STATES PATENT AND TRADEMARK OFFICE

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/801,649	03/09/2001	Akira Yoda	2091-0234P	3948

2292 7590 01/26/2006		EXAMINER
BIRCH STEWART KOLASCH & BIRCH		THOMPSON, JAMES A
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FALLS CHURCH, VA 22040-0747	ART UNIT	PAPER NUMBER
	2624	

DATE MAILED: 01/26/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

	Application No.	Applicant(s)
Office Action Summary	09/801,649	YODA, AKIRA
	Examiner	**Art Unit**	
	James A. Thompson	2624	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE <u>3</u> MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
  Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on <u>31 October 2005</u>.

2a)☐ This action is **FINAL.**   2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) <u>1-28</u> is/are pending in the application.

    4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) <u>1-28</u> is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on <u>09 March 2001</u> is/are: a)☒ accepted or b)☐ objected to by the Examiner.

    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

    Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

    a)☐ All   b)☐ Some * c)☒ None of:

        1.☒ Certified copies of the priority documents have been received.

        2.☐ Certified copies of the priority documents have been received in Application No. _____.

        3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

    * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1)☐ Notice of References Cited (PTO-892)

2)☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3)☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
    Paper No(s)/Mail Date _____.

4)☐ Interview Summary (PTO-413)
    Paper No(s)/Mail Date. _____ .

5)☐ Notice of Informal Patent Application (PTO-152)

6)☐ Other: _____.

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

1.   A request for continued examination under 37 CFR 1.114,
including the fee set forth in 37 CFR 1.17(e), was filed in this
application after final rejection. Since this application is
eligible for continued examination under 37 CFR 1.114, and the
fee set forth in 37 CFR 1.17(e) has been timely paid, the
finality of the previous Office action has been withdrawn
pursuant to 37 CFR 1.114. Applicant's submission filed on 31
October 2005 has been entered.

Priority

2.   Acknowledgment is made of applicant's claim for foreign
priority based on an application filed in Japan on 09 March
2000. It is noted, however, that applicant has not filed a
certified copy of the 065276/2000 application as required by 35
U.S.C. 119(b). Currently, there is no such foreign priority
document in the case file.

Response to Arguments

3.   Applicant's arguments filed 31 October 2005 have been fully
considered but they are not persuasive. Examiner agrees with
Applicant that Rhoads (US Patent 5,850,481) does not anticipate
claims 16 and 20-24, as presently amended, and Rhoads (US Patent
5,850,481) in view of Kenner (US Patent 5,956,716) does not
render claims 1-15 obvious to one of ordinary skill in the art
at the time of the invention. However, new grounds of rejection
based on the prior art of record are given below which render
the present claims obvious to one of ordinary skill in the art

at the time of the invention. Accordingly, prior art rejections

of the presently amended claims are given in detail below.

Claim Rejections - 35 USC § 103

4.   The following is a quotation of 35 U.S.C. 103(a) which

forms the basis for all obviousness rejections set forth in this

Office action:

> (a) A patent may not be obtained though the invention is not
> identically disclosed or described as set forth in section 102 of this
> title, if the differences between the subject matter sought to be
> patented and the prior art are such that the subject matter as a whole
> would have been obvious at the time the invention was made to a person
> having ordinary skill in the art to which said subject matter pertains.
> Patentability shall not be negatived by the manner in which the
> invention was made.

5.   Claims 1-15 and 25-27 are rejected under 35 U.S.C. 103(a)

as being unpatentable over Rhoads (US Patent 5,850,481) in view

of Banton (US Patent 5,404,411) and Kenner (US Patent

5,956,716).

Regarding claims 1, 6 and 11: Rhoads discloses an image

output apparatus (figure 6 of Rhoads) comprising reading means

(figure 6(218) of Rhoads) for obtaining initial image data

(column 17, lines 58-63 of Rhoads) representing an initial

(suspect) image recorded in an original image (column 19, lines

6-12 of Rhoads) and ID information for identifying an original

picture by reading the original image (column 16, lines 6-10 of

Rhoads) having the original picture and the ID information

inseparable from the original picture (column 12, lines 10-16 of

Rhoads). In order to obtain the image with the embedded N-bit

identification word (column 16, lines 6-10 of Rhoads), it is

inherent that said image is read. Otherwise, there would be no

image data from which to determine said N-bit identification

word. Since the embedded identification number can be retrieved

independent of whether operations such as scaling, cutting, and registering are performed on the image (column 12, lines 10-16 of Rhoads), then said identification information is clearly inseparable from the original picture.

Rhoads further discloses storage means (figure 6(214) of Rhoads) for storing a plurality of sets of original picture data samples in relation to ID information (column 22, lines 21-22 and lines 25-30 of Rhoads).

Rhoads further discloses reading means for reading equivalent original picture data representing an equivalent original picture (column 18, lines 64-67 and column 19, lines 14-15 of Rhoads) corresponding to the ID information of the original picture from the storage means (column 22, lines 21-22 and lines 25-30 of Rhoads). Since data samples of the original picture data are stored in memory (column 22, lines 21-22 and lines 25-30 of Rhoads) and used in a matching process with the suspect image (column 18, lines 64-67 and column 19, lines 14-15 of Rhoads), a reading means for reading said stored original data is inherent in the device. Otherwise, said stored original data would not be available for use in said matching process.

Rhoads further discloses processing means (figure 6(202); and column 17, lines 46-48 and lines 53-55 of Rhoads) for obtaining processed image data (column 19, lines 21-26 and lines 34-41 of Rhoads) by comparing the initial image data with the equivalent original picture data (column 18, line 64 to column 19, line 2 of Rhoads).

Rhoads further discloses output means (figure 6(234) and column 18, lines 43-44 of Rhoads) for obtaining a print by printing encoded image data (column 18, lines 53-55 of Rhoads).

Rhoads does not disclose expressly that said storage means stores, in relation to ID information, the entire original picture of each of said plurality of sets of original picture data; that said processing means carries out processing on the equivalent original picture data to cause the equivalent original picture data to geometrically agree with the original picture in the initial image; that the processed image data is output; that the processed image data geometrically agrees with the original picture in the initial image; and that said output means outputs the processed image data.

Banton discloses carrying out processing on equivalent original picture data (figure 2c(right side) of Banton) to cause the equivalent original picture data to geometrically agree with the original picture (figure 2c(left side) of Banton) in the input image (column 6, line 66 to column 7, line 10 of Banton); an output means (figure 1(17) of Banton) that outputs processed image data (column 4, lines 31-37 and column 7, lines 12-15 of Banton), wherein said processed image data geometrically agrees with the original picture in the initial image (column 6, line 66 to column 7, line 10 of Banton) (note: in figure 1 of Banton, the xerographic processor is mistakenly labeled "1" instead of "17"). The original picture (figure 2c(left side) of Banton) is replaced with equivalent original picture data (figure 2c(right side) of Banton) such that the equivalent original picture data to geometrically agrees with the original picture in the input image (column 6, line 66 to column 7, line 10 of Banton). The resultant corrected image data that is then output is the processed image data (column 7, lines 12-15 of Banton).

Rhoads is analogous art since Rhoads is in the same field of endeavor as the present application, namely embedding and

extracting identifying information into image data. Rhoads and Banton are combinable because they are from the same field of endeavor, namely the analysis of portions of digital image data. At the time of the invention, it would have been obvious to a person of ordinary skill in the art to generate processed image data that geometrically agrees with the original picture in the initial image, and then output said processed image data, as taught by Banton. The motivation for doing so would have been using the pattern matching taught by Banton to correct noisy errors, such as the noisy data taught by Rhoads, reduces the overall aliasing and line growth, and thus improves the resultant image (column 2, lines 35-41 and lines 59-63 of Banton). An additional motivation for doing so would be that pattern matching of a small image window area, as taught by Banton, is a fast method of image correction. Feedback from the pattern matching process taught by Banton will improve the results of pattern matching table selection (column 2, lines 53-56 of Banton). Therefore, it would have been obvious to combine Banton with Rhoads.

Rhoads in view of Banton does not disclose expressly that said storage means stores, in relation to ID information, the entire original picture of each of said plurality of sets of original picture data.

Kenner discloses storing the entire clip of video data along with its related identification (video ID) information for each of a plurality of video data clips (column 28, lines 46-54 of Kenner).

Rhoads in view of Banton is combinable with Kenner because they are from similar problem solving areas, namely the prevention of unauthorized data copying. At the time of the

invention, it would have been obvious to a person of ordinary skill in the art to store all of the data, along with the corresponding identification code, as taught by Kenner, said data being the image data taught by Rhoads. The motivation for doing so would have been to allow the original content provider to modify the content as desired (column 28, lines 40-45 of Kenner) and keep track of the different versions of the content (column 28, lines 12-15 of Kenner). Therefore, it would have been obvious to combine Kenner with Rhoads in view of Banton to obtain the invention as specified in claims 1, 6 and 11.

Further regarding claim 1: The apparatus of claim 6 performs the method of claim 1.

Further regarding claim 11: The apparatus of claim 6 performs the steps of the computer program of claim 11.

Regarding claims 2, 7 and 12: Rhoads discloses that the ID information is secretly embedded in the initial image (column 5, lines 38-41 of Rhoads). Since the ID information that is embedded in the initial image has the look of pure noise (column 5, lines 38-41 of Rhoads), the said ID information is clearly embedded secretly.

Regarding claims 3-4, 8-9, and 13-14: Rhoads discloses examining an image that potentially infringes upon a copyright (column 10, lines 48-52 of Rhoads) and comparing said infringing image with the original image (column 11, lines 55-64 of Rhoads) to determine if copyright infringement has indeed occurred (column 10, lines 53-55 of Rhoads).

Rhoads in view of Banton does not disclose expressly copying prevention processing means for carrying out processing to prevent copying on the processed image data and/or on the print.

Kenner discloses copying prevention processing means
(figure 4(58) of Kenner) for carrying out processing (column 25,
lines 55-62 of Kenner) to prevent copying on the processed image
data and/or on the print (column 25, lines 64-67 and column 26,
lines 10-13 of Kenner).

Rhoads in view of Banton is combinable with Kenner because
they are from similar problem solving areas, namely the
prevention of unauthorized data copying. At the time of the
invention, it would have been obvious to a person of ordinary
skill in the art to include a copying prevention means, as
taught by Kenner, based on the embedded copy prevention data
taught by Rhoads. The motivation for doing so would have been
to deter unauthorized copying and better enable the authorities
to track down copyright violators (column 26, lines 9-11 of
Kenner). Therefore, it would have been obvious to combine
Kenner with Rhoads in view of Banton to obtain the invention as
specified in claims 3-4, 8-9, and 13-14.

Regarding claims 5/1-5/4, 10/6-10/9, and 15/11-15/14:
Rhoads in view of Banton does not disclose expressly information
management means for managing a copyright of the original
picture based on the ID information.

Kenner discloses information management means (figure 4(90)
of Kenner) for managing a copyright of the original picture
based on the ID information (column 28, lines 46-52 of Kenner).

Rhoads in view of Banton is combinable with Kenner because
they are from similar problem solving areas, namely the
prevention of unauthorized data copying. At the time of the
invention, it would have been obvious to a person of ordinary
skill in the art to manage the copyright information based on
the ID information, as taught by Kenner. The motivation for

doing so would have been to be able to properly manage the distribution of copyrighted data (column 28, lines 52-58 of Kenner). Therefore, it would have been obvious to combine Kenner with Rhoads in view of Banton to obtain the invention as specified in claims 5/1-5/4, 10/6-10/9, and 15/11-15/14.

Regarding claims 25, 26 and 27: Rhoads discloses that the processing means is configured to extract a portion (difference signal) of the input image data that does not correspond to the original picture data (column 19, lines 21-26 of Rhoads), and configured to compose the output image data for output such that the portion of the input image data that does not correspond to the original picture data is in the output image data (column 18, lines 45-56 of Rhoads).

6. Claims 16-24 and 28 are rejected under 35 U.S.C. 103(a) as being unpatentable over Rhoads (US Patent 5,850,481) in view of Banton (US Patent 5,404,411).

Regarding claim 16: Rhoads discloses receiving a composition input data, wherein the composition input data includes an input image data, wherein the input image data includes at least a portion of an original picture data (column 17, lines 31-35 of Rhoads) with ID information corresponding to the original picture data embedded therein (column 19, lines 6-10 of Rhoads); extracting the ID information from the input image data (column 16, lines 6-10 and column 19, lines 6-12 of Rhoads); retrieving from storage an original image data corresponding to the ID information, wherein the original image data includes the original picture data with the related ID information embedded therein (column 22, lines 21-30 of Rhoads); and composing an output image data for output such that the

input image data of the composition input data is replaced with

a matching portion of the original image data (column 18, lines

45-56 of Rhoads).

Rhoads does not disclose expressly that the output image

data geometrically matches with the original picture in the

input image data.

Banton discloses carrying out processing on output image

data (figure 2c(right side) of Banton) such that the output

image data geometrically matches with the original picture

(figure 2c(left side) of Banton) in the input image data (column

6, line 66 to column 7, line 10 of Banton). The original

picture (figure 2c(left side) of Banton) is replaced with

equivalent original picture data (figure 2c(right side) of

Banton) such that the equivalent original picture data to

geometrically agrees with the original picture in the input

image (column 6, line 66 to column 7, line 10 of Banton). The

resultant corrected image data that is then output is the

processed image data (column 7, lines 12-15 of Banton).

Rhoads is analogous art since Rhoads is in the same field

of endeavor as the present application, namely embedding and

extracting identifying information into image data. Rhoads and

Banton are combinable because they are from the same field of

endeavor, namely the analysis of portions of digital image data.

At the time of the invention, it would have been obvious to a

person of ordinary skill in the art to generate output image

data that geometrically agrees with the original picture in the

input image data, and then output said processed image data, as

taught by Banton. The motivation for doing so would have been

using the pattern matching taught by Banton to correct noisy

errors, such as the noisy data taught by Rhoads, reduces the

overall aliasing and line growth, and thus improves the
resultant image (column 2, lines 35-41 and lines 59-63 of
Banton). An additional motivation for doing so would be that
pattern matching of a small image window area, as taught by
Banton, is a fast method of image correction. Feedback from the
pattern matching process taught by Banton will improve the
results of pattern matching table selection (column 2, lines 53-
56 of Banton). Therefore, it would have been obvious to combine
Banton with Rhoads to obtain the invention as specified in claim
16.

Regarding claim 17: Rhoads discloses extracting the
matching portion of the original image data corresponding to the
input image data (column 19, lines 14-17 of Rhoads).

Rhoads does not disclose expressly replacing the input
image data of the composition input data with the matching
portion of the original image data.

Banton discloses replacing the input image data of the
composition input data (column 7, lines 6-11 of Banton) with the
matching portion of the original image data (column 6, lines 63
to column 7, line 4 of Banton).

Rhoads is analogous art since Rhoads is in the same field
of endeavor as the present application, namely embedding and
extracting identifying information into image data. Rhoads and
Banton are combinable because they are from the same field of
endeavor, namely the analysis of portions of digital image data.
At the time of the invention, it would have been obvious to a
person of ordinary skill in the art to replace the matched noisy
portion taught by Rhoads with the original image data, as taught
by Banton. The motivation for doing so would have been using
the pattern matching taught by Banton to correct noisy errors,

such as the noisy data taught by Rhoads, reduces the overall
aliasing and line growth, and thus improves the resultant image
(column 2, lines 35-41 and lines 59-63 of Banton). An
additional motivation for doing so would be that pattern
matching of a small image window area, as taught by Banton, is a
fast method of image correction. Feedback from the pattern
matching process taught by Banton will improve the results of
pattern matching table selection (column 2, lines 53-56 of
Banton). Therefore, it would have been obvious to combine
Banton with Rhoads to obtain the invention as specified in claim
17.

Regarding claim 18: Rhoads discloses pattern matching the
original image data with the input image data (column 7, lines
35-39 and column 19, lines 14-17 of Rhoads).

Regarding claim 19: Rhoads discloses that the step of
pattern matching includes one or more of scaling, rotating,
cropping and translating (column 7, lines 35-39 and column 19,
lines 14-17 of Rhoads).

Regarding claim 20: Rhoads discloses that the ID
information is embedded in the original image data (column 22,
lines 21-26 of Rhoads) and the input image data (column 19,
lines 21-26 of Rhoads) in one or more subplanes (figure 13 and
column 35, lines 4-9 of Rhoads), wherein a dimension of the
original image data is mxn pixels (figure 13(700) of Rhoads),
and wherein each subplane is composed of pxq pixels, p<m and q<n
(figure 13(704); figure 16; and column 42, lines 40-46 of
Rhoads), and the subplanes are spaced apart a predetermined
number of pixels from each other (figure 16 and column 42, lines
40-43 of Rhoads). The ID information shown in figure 16 of
Rhoads is clearly an area of pxq pixels where p<m and q<n for an

mxn image. The fact that the ID information is "wallpapered" in the background demonstrates that the subplanes if the ID information are spaced apart a predetermined number of pixels from each other.

Regarding claim 21: Rhoads discloses that a bit value of the ID information is encoded in the subplanes (figure 17 and column 43, lines 25-33 of Rhoads).

Regarding claim 22: Rhoads discloses that the ID information is modulated on color channels of the original picture data (column 35, lines 4-8 and lines 25-30 of Rhoads).

Regarding claim 23: Rhoads discloses that the ID information (figure 17(826) of Rhoads) is modulated onto lower bits of the color channels (column 43, lines 25-33 of Rhoads). As can clearly be seen in figure 17 of Rhoads, the "shadow channel" containing the ID information is in the lower bits of the color channel.

Regarding claim 24: Rhoads discloses that the color channels are R, G and B (column 56, lines 55-57 of Rhoads).

Regarding claim 28: Rhoads discloses extracting a portion (difference signal) of the input image data that does not correspond to the original picture data (column 19, lines 21-26 of Rhoads); and composing the output image data for output such that the portion of the input image data that does not correspond to the original picture data is in the output image data (column 18, lines 45-56 of Rhoads).

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to James A. Thompson whose telephone number is 571-272-7441. The examiner can normally be reached on 8:30AM-5:00PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David K. Moore can be reached on 571-272-7437. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

James A. Thompson
Examiner
Art Unit 2624

18 January 2006